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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,394	08/23/2001	Duane Fasen	10004405-1	2455

7590 06/06/2002

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EXAMINER

MANDALA, VICTOR A

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 06/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/938,394	FASEN ET AL.
	Examiner	Art Unit
	Victor A Mandala Jr.	2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 07 May 2002.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 13-20 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u>	6) <input type="checkbox"/> Other: _____

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13, 15, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,654,202 Daly et al.

1. Referring to claim 13, an image sensor system, (Col. 1 Lines 7-10), comprising: an active image sensing device structure, (Figure 2 #13, #14, & #15); a color filter array, (Figure 2 #19); and a bottom antireflection coating, (Figure 2 #18), disposed between the color filter array, (Figure 2 #19), and a surface of the active image sensing device structure, (Figure 2 #13, #14, & #15).
2. Referring to claim 15, wherein the bottom antireflection coating, (Figure 2 #18), comprises a light absorbing polymeric film forming material, (Col. 9 Lines 12-13 & Col. 11 Lines 17-22).
3. Referring to claim 17, wherein the bottom antireflection coating, (Figure 2 #18), is substantially transmissive to radiation in a wavelength range of about 400nm to about 700nm, (Col. 9 Lines 12-13 & Col. 11 Lines 17-22).
4. Referring to claim 18, wherein the color filter array, (Figure 2 #19), comprises a plurality of colored photoresist structures, (Col. 1 Lines 41-51).

5. Referring to claim 19, wherein the bottom antireflection coating, (Figure 2 #18), has a substantially higher plasma etch rate, (\*\* See below), than the color filter array, (Figure 2 #19).

\*\*It is apparent in Daly et als' design that the same material for the antireflection coating is used in the applicants' design, thus the material would have the same physical properties resulting in the same output as claimed in claim 19.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 13 & 20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,184,055 Yang et al.

6. Referring to claim 13, an image sensor system, (Col. 1 Lines 8-11), comprising: an active image sensing device structure, (Figure 7j, (self labeled by numbers), #3); a color filter array, (Figure 7j, (self labeled by numbers), #1); and a bottom antireflection coating, (Figure 7j, (self labeled by numbers), #2 & see also \*\*\* below), disposed between the color filter array, (Figure 7j, (self labeled by numbers), #1), and a surface of the active image sensing device structure, (Figure 7j, (self labeled by numbers), #3).

\*\*\* It is apparent in Yang et als' design that the passivation layer is a antireflection coating because in Col. 10 Lines 22 & 29-31 explains that metal layers M1 and M2 are used to

shield non-photosensing regions and additional layers maybe added to due that but it does not state that the passivation layer performs this task. It is apparent that the passivation layer allows light to transmit through, thus being an antireflection coating.

7. Referring to claim 20, wherein the active image sensor device structure comprises a complementary metal-oxide-semiconductor (CMOS) image sensor, (Col. 1 Lines 8-11).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,654,202 Daly et al in view of U.S. Patent No. 6,060,732 Murakami et al.

8. Referring to claim 16, wherein the bottom antireflection coating, (Daly et al's' Figure 2 #18 & Murakami et al's' Figure 7 #15), has a thickness selected to improve an optical transmission characteristic of one or more colors of the color filter array, (Col. 2 Lines 7-11).

It would be obvious to one skilled in the art to combine the teachings of Daly et al. and combine them with the teachings of Murakami because adjusting the thickness of an antireflective film would allow adjustment to the focal point and to the refractory angle, thus allowing the sensor to be adjusted to properly sense. These teachings are well known in the art and by people who wear classes.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,654,202 Daly et al in view of U.S. Patent No. 6,106,995 Dixit et al.

9. Referring to claim 14, wherein the bottom antireflection coating comprises a dyed organic film-forming material, (Dixit et al. Col. 2 Lines 9-11 and Col. 2 Lines 15&16).

It would be obvious to combine the teachings of Daly et al. and the teachings of Dixit et al. because the dyed organic antireflection film reduces the reflectivity from the substrate allowing proper sensing from the sensor.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A Mandala Jr. whose telephone number is (703) 308-6560. The examiner can normally be reached on Monday through Thursday from 8am till 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

VAMJ  
June 3, 2002

*NATHAN J. FLYNN*  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800